

Air Quality Management Work Group

Report to the Clean Air Act Advisory Committee

December 16, 2004



Purpose of this briefing

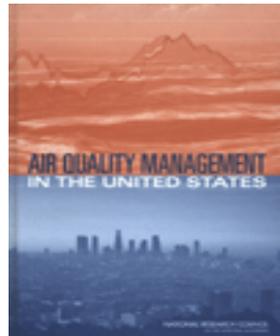
- Report on Work Group results
- Review recommendations
- Solicit CAAAC input
 - Preliminary reactions today
 - Additional written commentaries by January 6
- Recommend report be forwarded to EPA following Committee discussions by January 19

NRC Guidance on Implementing AQM Improvements

- CAAAC heard about NRC report last March
- Bottom line from NRC report
 - Tremendous progress with current air quality management system has been made
 - There are clear areas for improvements that could be made
 - Immediate attainment of these improvements is unrealistic.

NRC recommendation for moving forward:

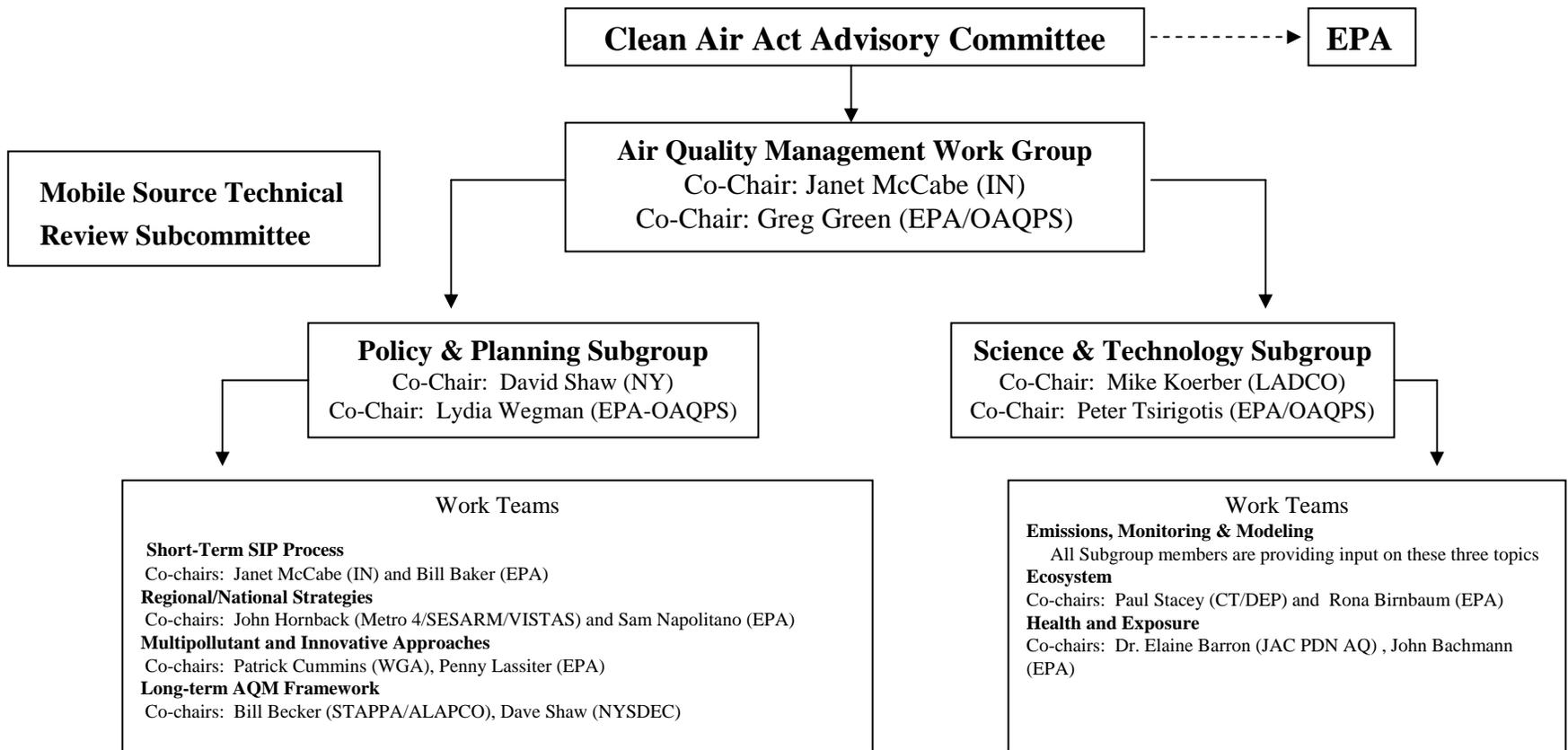
**Form an implementation workgroup consisting of major stakeholders from states, industries, environmental groups
.....(see p. 314 of report)**



Work Group Charge

- Develop recommendations to advise the CAAAC on improving the air quality management system in this country considering the NRC's report – Air Quality Management in the United States
- Initial focus on actions and opportunities available in the next 1 to 5 years to improve air quality management, especially for ozone and PM 2.5 NAAQS, regional haze, and integration of air toxics

Organizational Structure



Work Group Representation

- Forty-three (43) organizations represented:
 - 25 CAAAC (~ 80% active), 17 Non-CAAAC, and EPA
 - 15 State/Local/Tribal
 - 4 Regional Organizations
 - 17 Industry
 - 3 Environmental/Public Health
 - 4 Other
- Fifty-eight (58) total members (including alternates)
- Plus 42-member Mobile Source Technical Review Subcommittee
- Advisors: NRC – Dan Greenbaum and Michael Bradley

Work Group Process

- June to December 2004 – Work Group considered many options to improve the air quality management system consistent with NRC's Report.
- Recommendations were developed and prioritized by teams (high, medium and low)
- Reviewed and revised by both the Subgroups and the AQM Work Group
- Goal was “substantial consensus”

Work Group Results

- Report to the Committee includes:
 - 37 recommendations to advance to EPA
 - 12 recommendations need continued discussions
 - Draft long-term air quality management options need continued discussions
 - Recommendation to form new CAAAC Subcommittee
 - Recommendation for Work Group to continue until Subcommittee is formed.

Major NRC Recommendations

1. Strengthen Scientific and Technical Capacity
2. Expand National and Multistate Control Strategies
3. Transform the SIP Process
4. Develop Integrated Program for Criteria and Hazardous Air Pollutants
5. Enhance Protection of Ecosystems and Public Welfare

NRC 1: Strengthen Scientific and Technical Capacity

NRC RECOMMENDATION 1: Strengthen Scientific and Technical Capacity

NRC ACTIONS: Improve emissions tracking, enhance air pollution monitoring, improve modeling, enhance exposure assessment, improve health and welfare assessment, track implementation costs, and invest in research and human and technical resources

NRC 1: Strengthen Scientific and Technical Capacity

- 1.1 Improve emissions measurements and reporting.
- 1.2 Improve emissions factors and emission estimation methods.
- 1.3 Quantify and take actions to reduce uncertainty in emissions inventories and air quality modeling applications.
- 1.4 Promote and improve integrated, multipollutant monitoring.
- 1.5 Undertake a systematic effort to track air quality achievements and evaluate air program results.

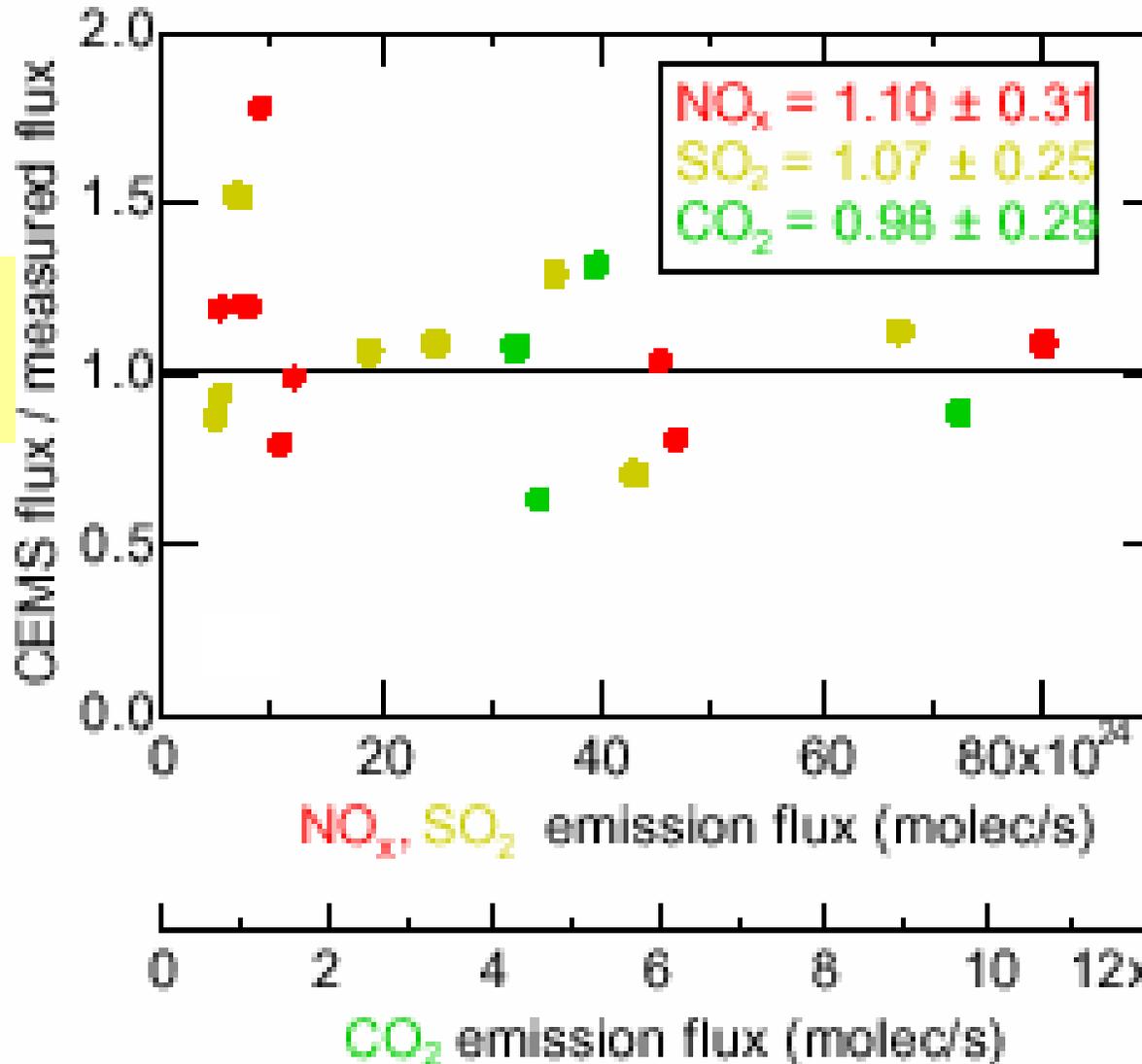
Recommendation 1.1

Emissions Measurements and Reporting

- (1) Conduct study to identify measurements methods, source categories for which these methods can be applied, and measurement protocols**
- (2) Identify efforts needed to develop new measurement method needs, and costs**
- (3) Evaluate need for and appropriateness of regulations to require emissions measurements**
- (4) Evaluate need for and appropriateness of regulations to require reporting of emissions measurements**



Emissions Monitor v. Ambient Measurements: Power Plant

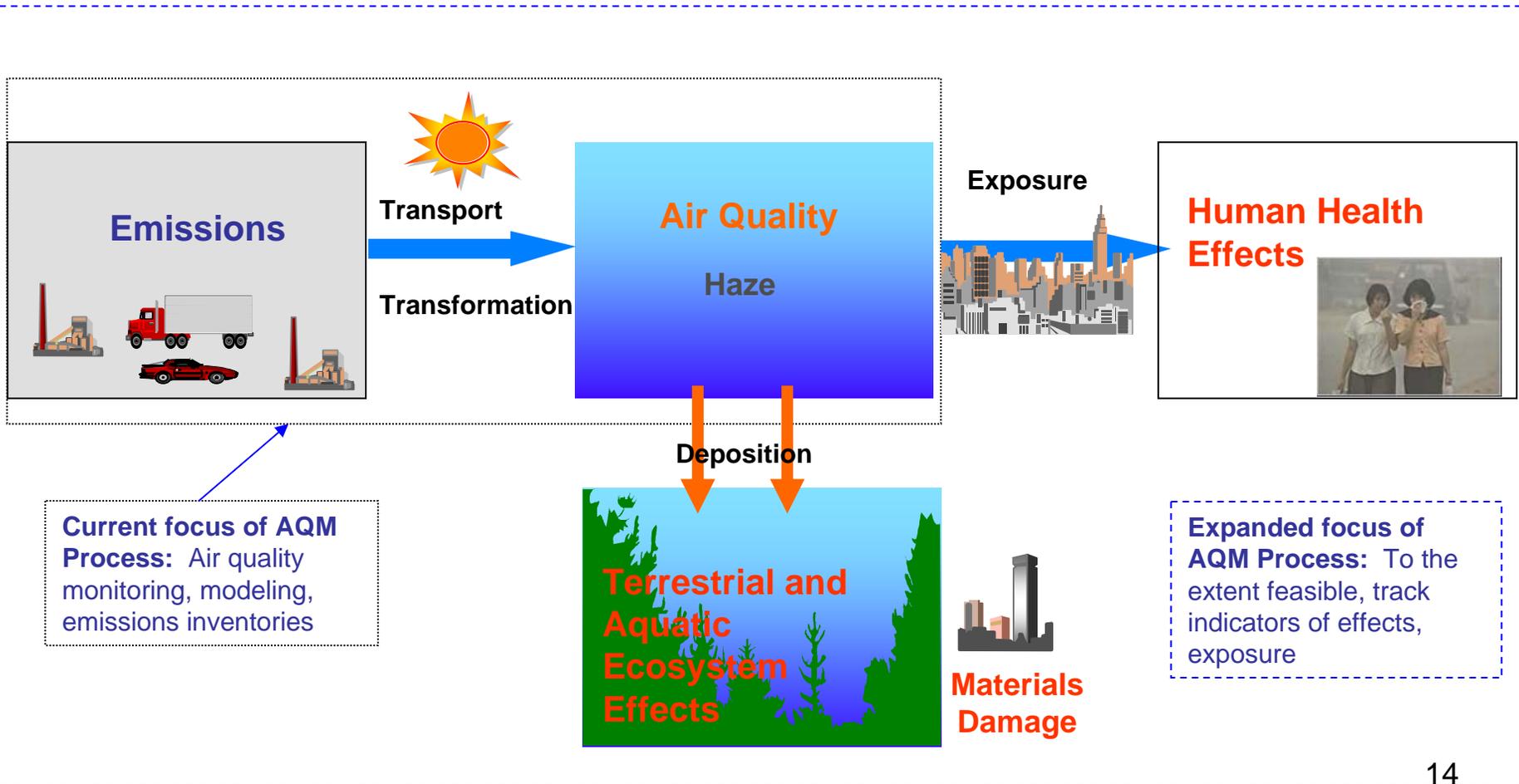


CEM based 'flux' in Plume

'Flux' measured in plume by aircraft traverse

1.5 Framework for Accountability

EPA should undertake a systematic effort to track air quality achievements and evaluate air program results



Expanding the Framework for Accountability

(1) For public health:

- Facilitate communication among health research and program accountability efforts
- Expand ongoing efforts into public health and air quality accountability
- Undertake specific accountability efforts (e.g., intervention studies)

Expanding the Framework for Accountability

(2) For ecosystems:

- Improve tracking and assessing effects of multiple air pollutants on ecosystems
- Conduct appropriate suite of measurements for detecting ecosystem response
- Collaborate on integrated assessments
- Examine possibility of using critical loads and thresholds

Applying the Framework for Accountability

(3) As part of the SIP planning process, States should:

- Identify metrics for each major control program
- Determine emissions/ambient measurements for each metric

NRC 2: Expand National and Multistate Control Strategies

NRC RECOMMENDATION 2: Expand National and Multistate Control Strategies

NRC ACTIONS: Expand federal emission controls, emphasize technology-neutral standards, use market-based approaches, reduce existing-sources emissions, and address multistate regional transport

NRC 2: National/Multistate Strategies

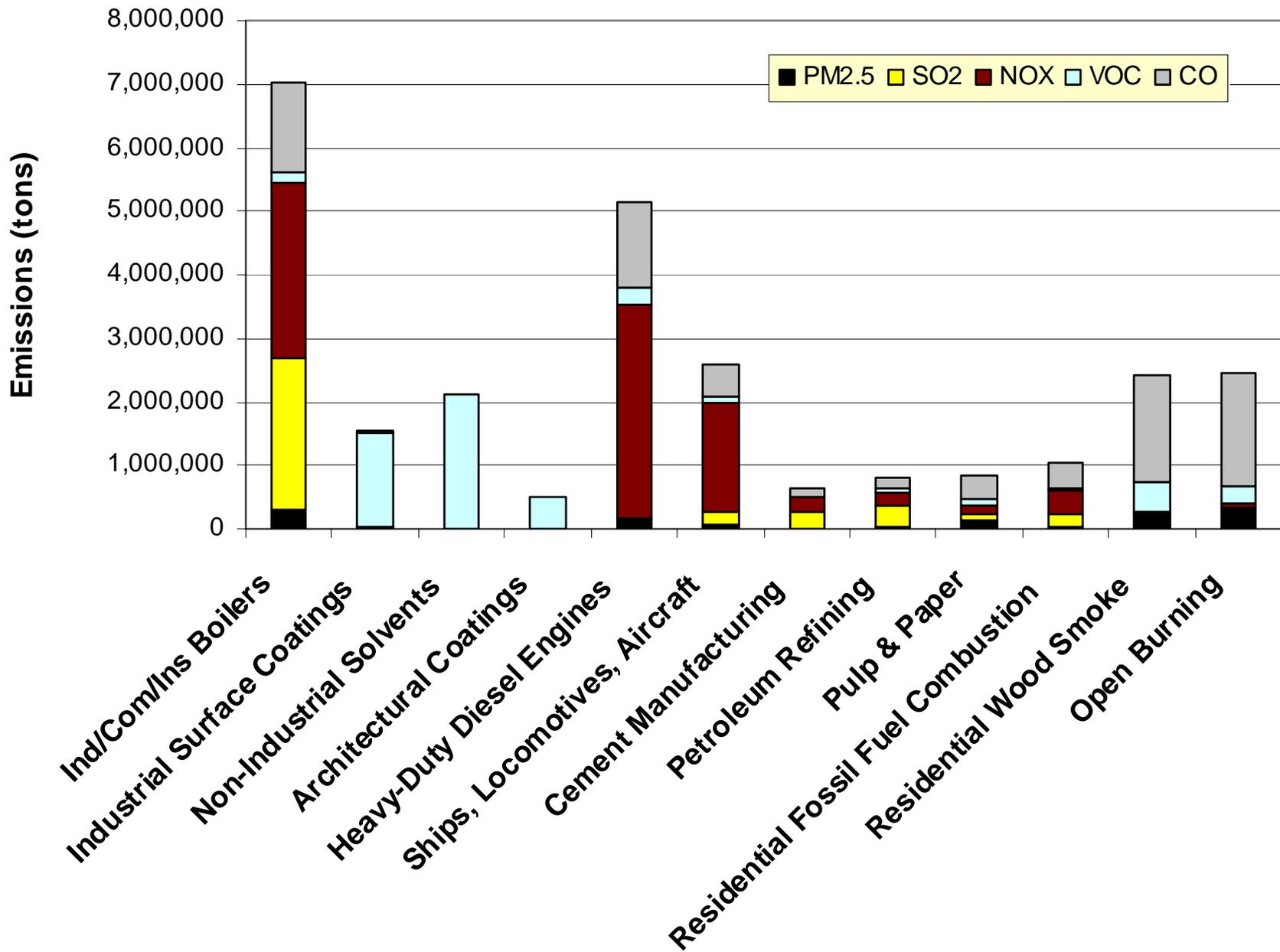
- Goals
 - Provide air quality reductions to local, state, tribal agencies
 - Deliver in next 2-3 years
 - Achieve reductions by 2008-2010
 - Aid in achieving fine particle and ozone standards in nonattainment areas with worst air quality

NRC 2: National/Multistate Strategies

- Goals (continued)
 - Deliver effective control strategies, such as cap and trade
 - Address multiple pollutants
 - Achieve as economically as possible
 - Provide as much flexibility as possible
 - Consider a combination of regulatory and non-regulatory approaches

NRC 2: National/Multistate Strategies

- Emissions Categories Reviewed
 - Point sources
 - Mobile sources (from Mobile Source Technical Review Subcommittee)
 - Area sources
 - Total of more than 40 emission categories



Emissions from key source categories are nationally significant

NRC 2: National/Multistate Strategies

Further Study and Possible National and Regional Regulations (stationary categories)

2.1 Industrial, Commercial, and Institutional Boilers

2.2 Industrial Surface Coatings

2.3 Non-Industrial Solvents

2.4 Architectural Surface Coatings

NRC 2: National/Multistate Strategies

Further Study and Possible National and Regional Regulations (mobile)

2.5 Existing heavy duty diesel fleet

- In-use testing
- Retrofits
- Idling practices
- Some supported more aggressive actions including retirements and retrofits

NRC 2: National/Multistate Strategies

Further Study and Possible National and Regional Regulations (mobile)

2.6 Emissions from ships, locomotives, aircraft, and mobile source air toxics

- Technology-forcing engine standards
- Fuel reformulations to address air toxics
- Development of model programs for operations at seaports, rail yards, and airports
- Regulatory initiatives already in the pipeline

NRC 2: National/Multistate Strategies

Evaluation of Additional Emissions Reductions Potential and Cost-Effectiveness (stationary)

2.7 Cement manufacturing, petroleum refining, pulp and paper

- Regulated but still significant emissions

2.8 Residential fossil fuel combustion

- Expand Energy Star program
- Low Sulfur fuel
- Work with manufacturers on incentives

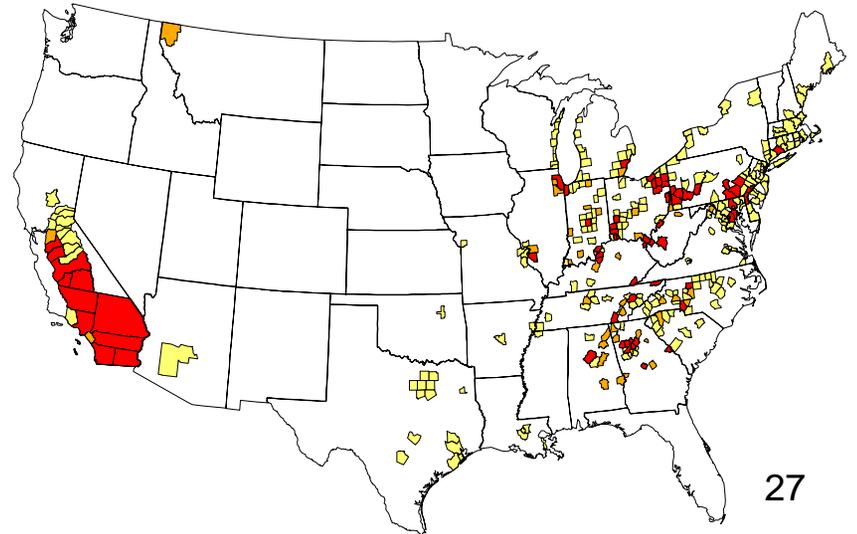
NRC 2: National/Multistate Strategies

National Guidance for Local Controls

2.9 Guidance by Oct 2005 to support upcoming ozone and PM_{2.5} SIP submittals

2.10 Residential wood smoke

2.11 Open burning



NRC 2: National/Multistate Strategies

Nat'l Guidance for Local Controls (cont)

2.12 High emitting gasoline vehicles

- Improve inventories
- Enhance in-use testing capabilities
- Support local testing and enforcement

2.13 Conformity

- Transportation planning should continue
- Protect sensitive populations/expand emissions budgets to limit other sectors

NRC 3: Transform the SIP Process

NRC RECOMMENDATION 3: Transform the SIP Process

NRC ACTIONS: Replace state implementation plan with integrated multipollutant air quality management plan and reform process to focus on tracking results using periodic reviews, encouraging innovative strategies, and retaining conformity and federal oversight

NRC 3: Transform the SIP Process

Major Steps in the SIP Process



**** If mandated SIP is disapproved or a complete SIP never submitted, then EPA must promulgate a Federal Implementation Plan (FIP)**

NRC 3: Transform the SIP Process

Streamlining the SIP Process

3.1 Align SIP Submittal Dates

3.2 Protocol for SIP Development

3.3 Clearinghouse of Approved SIPs

3.4 Streamline Minor SIP Revisions

3.5 Timely EPA Guidance

3.6 Avoid Unnecessary Public Hearings

3.7 Facilitate Redesignation Process for Certain Areas

NRC 3: Transform the SIP Process

Measures to Improve Communication to the Public

3.8 Effective Communications with Constituencies

3.9 Co-Benefits of Innovative Measures

NRC 3: Transform the SIP Process

Steps to Increase Adoption of Innovative Measures

3.10 Innovative and Voluntary Measures

3.11 SIP Credits for Bundled Innovative Measures

NRC 3: Transform the SIP Process

Increasing Collaboration in SIP Planning and Control-Strategy Development

3.12 Regional Approaches to SIP Planning

3.13 Federal and State Partnerships

Increasing Collaboration in SIP Planning and Control-Strategy Development

3.12 Regional Approaches to SIP Planning

- Planning for new or major revisions to SIPs for two or more separate nonattainment areas that are both part of the same regional-scale air quality problem should be coordinated.
- If requested by a State, EPA should work with the different nonattainment areas, Tribes and combinations of multistate organizations and other stakeholders to assist in the development of regional approaches to planning.
- This could include technical assistance such as modeling, national or regional control strategies, model SIPs, and model rules as templates for S/L/T adoption.

Increasing Collaboration in SIP Planning and Control-Strategy Development

3.13 Federal and State Partnership

- EPA should participate in the SIP/TIP development process to identify and pursue emissions reductions from important source categories, especially those that only the federal government has the ability to address, such as federal and international sources.
- The level of control sought from these sources should be commensurate with their impact on the nonattainment area.
- For attainment demonstrations, States should be able to take appropriate credit for anticipated reductions from these sources as long as the control strategy and its anticipated impact are found to be consistent with EPA regulation and guidance.

NRC 3: Transform the SIP Process

Steps to Improve Tracking and Evaluation of Results

3.14 Weight-of-Evidence Demonstrations

3.15 Periodic Assessments to Track Progress

3.16 Averaging, Banking, and Trading in Gasoline Sulfur Program

Steps to Improve Tracking and Evaluation of Results

3.14 Weight-of-Evidence Demonstrations

- To move beyond the current approach of relying on air quality modeling, EPA, in conjunction with S/L/T and others, should modify its guidance to promote weight-of-evidence (WOE) demonstrations for both planning and implementation efforts.
- These demonstrations should reduce reliance on modeling data as the centerpiece for SIP/TIP planning, and should increase use of monitoring data, especially for tracking progress.

Steps to Improve Tracking and Evaluation of Results

3.15 Periodic Assessments to Track Progress

- S/L/T and EPA should conduct periodic assessments to ensure that areas are on track to meet NAAQS, HAP, and visibility goals, and make mid-course adjustments, as necessary.

NRC 4: Develop Integrated Program for Criteria and Hazardous Air Pollutant

NRC RECOMMENDATION 4: Develop Integrated Program for Criteria and Hazardous Air Pollutants

NRC ACTIONS: Set priorities for pollutants, institute dynamic review of pollutant classification, list potentially dangerous but unregulated pollutants, address multipollutants in standard-setting process, and enhance residual assessment

NRC 4: Develop Integrated Program for Criteria and Hazardous Air Pollutant

4.1 SIPS to Address Multipollutant Impacts

4.2 Multipollutant Benefits and Disbenefits in Standards Setting

NRC 4: Develop Integrated Program for Criteria and Hazardous Air Pollutant

4.1 SIPs to Address Multipollutant Impacts

- For the SIPs States are required to submit over the next several years, EPA and S/L/T should promote the consideration of multipollutant impacts, including the impacts of air toxics, and where there is discretion, select regulatory approaches that maximize benefits from controlling key air toxics, as well as ozone, PM_{2.5}, and regional haze.

NRC 4: Develop Integrated Program for Criteria and Hazardous Air Pollutant

4.2 Multipollutant Benefits and Disbenefits in Standards Setting

- EPA should explicitly outline and quantify multipollutant benefits and disbenefits when setting emissions standards.

NRC 5: Enhance Protection of Ecosystems and Public Welfare

NRC RECOMMENDATION 5: Enhance Protection of Ecosystems and Public Welfare

NRC ACTIONS: Conduct review of standards to protect public welfare, develop ecosystem monitoring networks, establish acceptable ecosystem exposure levels, promulgate secondary standards, and track progress

NRC 5: Enhance Protection of Ecosystems and Public Welfare

5.1 Program Review to Improve Ecosystem Protection

- In parallel with recommended S&T work
- Examine clean air related policy and programs relating to environmental/public welfare protection
- Develop alternative approaches to advance protection of ecosystems; consider the following
 - Regional cap and trade programs
 - Ecosystem-based critical loads
 - Statewide planning program for attainment areas (inc. National Parks, Wilderness areas)



There's too much here!!!!

- 37 recommendations and more than 60 specific recommended actions
- Science recommendations alone may cost several million dollars
- EPA may be so overwhelmed that little or nothing gets done, or will selectively address recommendations
- We should (must?) provide EPA some focus or direction

Unresolved Issues for Further Discussion

- Greenhouse gas emissions
 - Multipollutant approach to address co-benefits and disbenefits of greenhouse gas emissions as well as air toxics
 - Some felt analysis could assist States in making control decisions
 - Others felt it was not a core focus of air quality management system or NRC report (criteria pollutants, toxics, and haze)
- EGUs
 - Significant source of emissions
 - Several programs currently addressing emissions from the sector
 - Substantial disagreement about whether or how to assess this category further
 - Need for utilities and agencies to collaborate post-CAIR plans

Long-Term Framework Discussions

- Core principles as guide
- Four framework options
- Must continue discussions

Process for Implementation Continued Discussions

- Recommend new subcommittee be formed to continue efforts started by this Work Group
 - Work with EPA to set priorities and implement recommendations
 - Track progress
 - Resolve issues deferred by this Work Group
 - Resolve long-term vision and framework discussion started by this Work Group
 - Work with EPA to adjust any of earlier recommendations based on long-term framework decisions
- New subcommittee should coordinate implementation efforts with other CAAAC Subcommittees

Next Steps -

- Discuss as full Committee today
- Committee moves to forward report to EPA
- Committee delivers comments to Work Group Co-Chairs between Dec 16 and Jan 6
- Work Group incorporates Committee comments as an addendum to Report
- CAAAC Chair transmits final report to EPA Administrator by Jan 19
- EPA develops implementation plan in coordination with Work Group
- EPA outlines plans for implementation at April CAAAC meeting